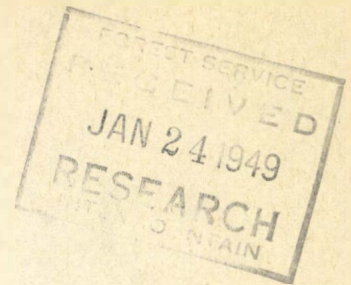


QUARTERLY PROGRESS REPORT  
4th Quarter 1948  
(October, November, December)



FOREST UTILIZATION SERVICE

CENTRAL STATES FOREST EXPERIMENT STATION  
COLUMBUS, OHIO

H. L. MITCHELL, DIRECTOR

LOGGING EQUIPMENT DEMONSTRATION

The first logging equipment show to be held in the midwest attracted approximately 800 loggers and sawmill men to the Kaskaskia Experimental Forest in southern Illinois on October 14. The demonstration was sponsored jointly by the FUS Unit, the Carbondale Branch of the station and the Extension Service of the University of Illinois. Everyone concerned considered it a very successful show and expressed the hope that it would become an annual institution. Extension Foresters from two adjacent states have already inquired concerning the possibility of securing next year's show.

It is our feeling that FUS will probably have to carry the ball on this type of demonstration for several years, but that eventually the Extension Foresters, the Trade Associations, or possibly the local sections of the SAF will take over. Our experience this year with Extension Forester Culver was most satisfactory. The Extension Service handled most of the publicity, the FUS most contacts with industry, and the Carbondale Branch handled all local arrangements.

Factory representatives, district managers, and distributors from over 30 manufacturers of logging and sawmilling equipment demonstrated their products at the show. Caterpillar and International had the largest assortment of models. Seven different manufacturers of chain saws were represented including three models not commonly seen in the midwest; the Hornet, a Canadian product; the Poulan bow type, manufactured in Shreveport, Louisiana; and the McCulloch, a new lightweight saw manufactured in Los Angeles. Hyster and the Pacific Car and Foundry had rubber tired sulkies in operation including "Carco's" new Junior model which attracted great attention from the smaller operators. It appears ideal for farm woods operators. Carco also demonstrated the new snatch choker system developed by "Swede" Anderson of the Marathon Corporation. Two new types of self loading trucks, including the Timber Toss-er, were shown in operation. Other equipment which was demonstrated for the first time in the Central States included: The Oliver Corporation's logging kit with hydraulic lift bar; the Dowd Hydraulic Log Cart, manufactured at Siler City, North Carolina, and the latest models of both the Champion and

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Loggers Dream loaders. The International TD9 with Superior crane was of considerable interest to the larger operators.

Corley Manufacturing Company of Chattanooga and the Jackson Lumber Harvester of Brewton, Alabama had portable sawmills at the show. The highly mobile Jackson mill which has found its place in the harvesting of farm woods in the South and Lake States attracted great interest but most sawmill operators at the show expressed doubt as to its suitability in our stands of heavy hardwoods. Two farm cooperatives, one in Ohio and one in Illinois, however are using this mill and having reasonable success sawing oak and other heavy species up to about 28 inches diameter.

At the noon hour there were chopping and sawing contests, a demonstration of wire-rope splicing, and a talk on safety in small-sawmill and woods operations. A splendid lunch was served by two local church groups.

All equipment was demonstrated under actual operating conditions. Felling, bucking and skidding were done in the woods on compartments allotted to demonstrate. Logs were skidded to a single point where the several types of loaders were demonstrated. Logs were loaded on waiting trucks and transported to two sawmills. These mills were within walking distance of the rest of the demonstration yet far enough away to represent operating conditions.

A number of suggestions have been received for improvement of any future shows. It is planned to summarize these and possibly with the assistance of Fred Simmons and others, a short manual of procedure for such shows may be prepared. The increasing interest in this type of demonstration indicates that such a report would be in considerable demand.

#### ARMY MOBILE SAWMILL

(This item should have been in our 2nd quarter 1948 progress report, but was inadvertently omitted from the final rough draft.) Working plans for field tests of the Army mobile sawmill were prepared and submitted to the Army Engineer Board at Fort Belvoir, Virginia early in the 2nd quarter. On June 8 the Engineer Board approved these plans. Following the signing of a memorandum of understanding for loan of the mill to the Mansfield Farmers' Exchange in Missouri, two employees of that organization were actually enroute to Fort Belvoir to transfer the mill equipment when the approval was suddenly and unexpectedly rescinded by higher military authority in Washington. The revised terms under which the Army would agree to release the equipment were so restrictive as to be unacceptable either to the Exchange or this station. Plans for this cooperative project, therefore have been moved into the closed files.

#### IOWA SAWMILL TRAINING MEETINGS

The Laboratory and FUS took part, at the request of R. B. Campbell, Iowa Extension Forester, in a series of sawmill-operator training meetings at six widely separated Iowa towns during the first half of October. Fred Malcolm and A. C. Wollin of the FPL made up a hardwood lumber-grading team at three of the meet-



ings. Professor George B. Hartman, now Head of the Iowa State College Forestry Department, handled this subject at the other three schools. A lecture on hardwood lumber-grading rules was given during each morning session followed by demonstrations of how to saw different classes of logs and grade all lumber cut therefrom, during the afternoon sessions at sawmills in or near the towns where the morning meetings were held. Ken Kimball, FPL dry-kiln engineer, talked on the subject of lumber seasoning at three of the meetings. Brundage took over the seasoning lectures at the three meetings not attended by Kimball, spoke on the topic of woodwaste utilization at one meeting and demonstrated the SCR-625 metal detector at the first four sessions. Other items on the program at this series of meetings were a movie of western logging and milling loaned by the Weyerhaeuser Lumber Company, talks on good forestry practices by Farm Foresters, and discussions of proper sawmill operation and maintenance by representatives of the Disston and Atkins saw manufacturing companies.

#### COOPERATION WITH LOCAL FORESTRY AGENCIES

More FUS and Laboratory advisory service was given during the quarter to the Muskingum Watershed Conservancy District having headquarters at New Philadelphia, Ohio. The District's Associate Forester, Mr. H. P. Garritt, is planning improvement thinning operations in their young hardwood stands. Trees to be removed for silvicultural reasons will average about 10 inches in diameter with an average 25 feet useable length. Bolts to a minimum diameter of 8 inches will be converted into crates, pallets, snow fence and other easily remanufactured products which can be disposed of without seeking markets too far away from the timber supply sources. Mr. Garritt believes that such thinning operations can pay their way as he produces a minimum of rough-sawed material and a maximum of simple remanufactured products. Top cuts down to a minimum diameter of 4 inches will go into mine props. Plans to minimize cutting and transportation costs involve hand felling and trimming, horse skidding in full lengths for an average distance of about 250 feet, a rocker-arm power cut-off saw mounted on a flat semi-trailer having rollers along one side, and wooden pallets on which bolts and props will be segregated according to lengths. Loaded pallets are to be moved to truck loading points on a large sled equipped with a hydraulic hoist. Steel-strapped pallet loads, like the pulpwood units now being bundled for cheaper handling in some sections of the country, are being considered. Information provided by the Laboratory and FUS covered logging methods and equipment, kinds of products that might be made from particular species to be cut, and kinds of equipment suitable for a small remanufacturing plant. The District now operates a first-class portable circular mill and brings in its sawlogs with a Diesel crawler tractor and pneumatic-tired arch.....Further field contact was made by FUS with the Columbiana County Extension Forester (Ohio). Some progress has been made in arousing community interest in support of a new woodworking enterprise in a section of the county where forest land now furnishes practically no local employment. FUS advice has been sought chiefly with respect to seasoning, equipping a small woodworking plant, and kinds of end products which, without requiring too much investment in remanufacturing plant, appear to offer the best opportunities for profitable utilization of the timber that should be cut now for stand improvement.



## PULP AND PAPER

The Champion Paper and Fibre Company has not yet been able to find the 425 tons of bark-free woodwaste needed per day for their proposed new book-paper mill at Hamilton, Ohio within a 150-mile hauling radius. Considering all classes of woodwaste combined, there is, a far greater tonnage than needed well within 150 miles of Hamilton, but when woods waste, sawmill slabs "as is", and other types they cannot use are eliminated, the remaining volume of clean, solid hardwood waste desired is surprisingly small. The company has requested FUS to furnish them with the names of specific plants which have requested information about potential outlets for their woodwaste and to give them other references which their field men can follow up. They suggest that it would be worthwhile for FUS men to stress the possibilities of storing waste for accumulation of carload lots in their contacts with the numerous smaller woodworking plants producing only a few tons of waste weekly. FUS will try to spend more time in cooperating with this company during 1949. A large paper mill running entirely on woodwaste picked up at factories scattered over an area 300 miles in diameter will be decidedly unique. Hardwood sawmill slabs are abundant and would be an ideal raw material for this company if they could be obtained at the source bark-free.....Last year there was considerable promotional activity on the part of the Missouri Department of Resources and Development for establishing a newsprint mill to provide paper for local consumption, particularly for the benefit of small-town newspaper owners who, it was said, have to pay exorbitant prices for all of the newsprint they use. Information about processes for making newsprint from the shortleaf pine and hardwoods native to Missouri was furnished by the Laboratory and FUS. At the same time some of the difficulties that would confront such a venture were pointed out, particularly (1) the tough competitive position a newsprint mill in Missouri would occupy when inflated prices subside and (2) the opposition that might come from conflicts with the state's heavy recreational use. No more has been heard about the matter until renewed inquiries were received this Quarter by Franklin Liming, now in charge of our Northern Ozark Branch at Columbia, Missouri. All information previously accumulated for the Department of Resources and Development was given to Liming by FUS for passing on to the new inquirers.

## MODIFIED WOODS

A manufacturer of jordan in Middletown, Ohio is interested in the possibilities of impreg and compreg for jordan-plug fillings. For the benefit of readers not familiar with paper mill equipment, a jordan is a wood-pulp refining machine. The plug is the inside, cone-shaped part which revolves on a shaft within the jordan shell. The plug fillings are lengthwise bars of wood between alternate bars of steel around the outer surface of the plug. Following up on some inquiries the company had submitted to the FPL, Brundage found they had had some fillings made for trial at a paper mill in Illinois. The first set, made of yellow pine compreg by a southern concern, did not prove satisfactory. The second set, made of maple compreg in Cincinnati was still on trial at the time of the FUS visit. The latter set had been very expensive, however, costing about ten times as much as the usual standard set made of untreated white oak. The manager was interested in knowing about the suitability of massaranduba and other South American hardwoods for use as jordan fillings. This information was supplied by



the Laboratory at the request of FUS. The company was advised by the Laboratory that the cost of compreg fillings on a production basis should be considerably below the amount paid for the trial set, also that plain impreg or semi-compreg might be satisfactory. Possibly a cooperative project may develop in which jordan-plug fillings of modified wood will be made by the Madison Laboratory for large-mill trial.....On a visit at the plant of a large aircraft manufacturer in Ohio, it was found that active interest in expansion molding had just been revived following correspondence with the Laboratory in February 1948 regarding this type of application of modified wood. A new plane was being designed and the engineers had just decided that the expansion molding idea would be worth trying for the type of propeller they wanted. Some pertinent information was furnished on the spot by FUS and other advice was requested from the Laboratory regarding expansion molding wood-to-metal adhesives and compreg-to-metal adhesives.

#### DERIVED PRODUCTS

Plans are being made by FUS and the program leader of ~~our~~ Carbondale, Illinois Branch for a conference next quarter at the University of Illinois for discussion of wood-sugar products and feeding experiments. Participants aside from Forest Service representatives will be personnel of the Illinois Agricultural Experiment Station, the University Animal Science and Forestry Departments, the Northern Regional Laboratory at Peoria, a railroad company and five or six livestock feed companies. Four companies in Illinois have received small samples of wood molasses from the Madison Laboratory but not enough has been available for any comprehensive feeding experiments. Anticipating that supplies for additional tests will be obtainable sometime during 1949, the purpose of the proposed meeting is (1) to review the experiments which have been, are now being, or are scheduled to be conducted elsewhere, (2) consider the specific kinds and scope of wood-sugar feeding studies which it appears desirable to conduct in Illinois, and (3) discuss any particular aspects of the general subject of wood hydrolysis products in which the conferees are most interested..... Charcoal producers in the region complain about the loss of a big pre-war market for charcoal for use in poultry feeding which ceased when all charcoal was allocated to more essential uses by the Government. Now that plenty is again available, why hasn't this large volume market returned? FUS inquiries during the last quarter indicate that there are differences in opinion as to whether charcoal does or does not have any merits as a supplement in poultry feeding. Officials of three Central States feed concerns questioned during the quarter, including the big Ralston Purina Company said they do not use charcoal in any of their poultry feeds. The head of the Ralston research department declared they had found from experiments years ago that it has no value for that purpose. At Iowa State College, poultry nutrition specialist, Dr. Johnson, stated that charcoal has only limited use in small amounts (1) for controlling a parasitic poultry disease called toxidiosis, and (2) in feeding experiments where it is desired to eliminate vitamin A. This information was sent to the Madison Laboratory. The Division of Derived Products consulted Professor Halpin, Chairman of the Poultry Husbandry Department, University of Wisconsin. His findings agreed with Dr. Johnson's. Charcoal actually interfered with the assimilation of vitamin A. Dr. Halpin criticises reports emphasizing



good points of charcoal as a feed on the grounds that "the studies fail to include either a sufficiently large population or the proper stock of experimental poultry." The Central States Station would appreciate hearing from all readers of this progress report who know of any good evidence, pro or con, concerning the use of charcoal in poultry feeding. It has an important bearing in FUS contacts with Central States producers of charcoal and on the answers to inquiries which come in intermittently from potential producers.

### SILVICULTURAL RELATIONS

After conferring with FUS and Forest Management men at the Central States Station, Eric Anderson of the Madison Laboratory collected samples of red pine plantation trees early in November. These will be examined and tested at Madison for strength and other properties as related to spacing and other variables in the plantations. With the cooperation of Ohio State Forester Alderman, and Forest Supervisor Grabow in Indiana, specimens were obtained from three plantations on Ohio State Forests and from one on the Hoosier Purchase Unit.

### HICKORY UTILIZATION STUDY

Men at our Branch Stations and Forest Supervisors in Central States territory who receive our FUS progress reports will be interested in knowing that a comprehensive study of hickory utilization has been started in the South. Southern and Southeastern Station FUS men are gathering information to be used in preparing a research program proposal for the FPL, which it is hoped will lead to better utilization of hickory, particularly low-grade trees and logs. The regions are cooperating by sending to all of their National Forests which have hickory utilization problems, a questionnaire prepared by the FUS-R-8 Coordinating Committee. The questions ask for the volume of hickory on each forest, the percent of the total timber stand in hickory, special information on sales involving hickory (high-quality hickory only - woods run hickory - major uses of hickory sold - quality specifications for sales of high-quality hickory only); sales of hickory along with other species (do buyers take all hickory?--if not all, how much?-- what is this hickory used for? - buyers' quality specifications for hickory they do log?); when hickory cannot be sold what silvicultural problems does this raise?; reasons generally given for refusing all or part of hickory on timber sales areas.

No field work is called for in preparing answers to the above questions. Rangers and Supervisors are to use their best judgment based on their existing knowledge. The questionnaires were sent to the southern forests in October.

We shall keep you informed of any results from this project which might be of benefit in the utilization of hickory on Central States cutting areas which may be reported by the FUS Units of the Southern and Southeastern Stations.

Distribution of this progress report

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